

## **DATA REPOSITORY ITEM 2004066**

### **APPENDIX DR1: SUPPLEMENTARY INFORMATION TO THE PHYSIOLOGY AND BEHAVIOR OF CHANNID FISHES**

Talwar and Jhingran (1992), West et al. (1991), Lee and Ng (1991), Vierke (1978), Sahni and Khare (1977), Berg (1965), Liem (1963), Smith (1945).

### **APPENDIX DR2: SUPPLEMENTARY INFORMATION TO THE FOSSIL RECORD OF CHANNID FISHES**

Sach et al. (2003), Gaudant (2002), Filipov et al. (2000), Böhme (1999), Sach (1999), Gaudant and Reichenbacher (1998), Gaudant (1996), West et al. (1991), Sytchevskaya (1989), Reichenbacher (1988), Gayet (1988), Sahni and Khare (1977), Khare (1976), Brzbohaty (1969), Logatchev et al. (1964)

### **APPENDIX DR3: SUPPLEMENTARY INFORMATION TO MATERIAL AND METHODS**

This study is based on a dataset from my “Lower Vertebrate” database (Böhme and Ilg, 2003; [www.wahre-staerke.com](http://www.wahre-staerke.com), accessed January 2004). The database contains taxonomic, taphonomic, stratigraphic, ecologic, environmental, and geographic information derived from the literature, as well as from my studies of museum material. The dating of European localities is based on small mammal biostratigraphy and magnetostratigraphy, which allows a time resolution between 0.1 and 1 Ma. The dating of most of the Asian and African localities is based on absolute dating methods, mammal biostratigraphy, or regional stratigraphy and has a somewhat coarser time resolution between 0.1 and 3 Ma. Localities which were stratigraphically ambiguous or for which an age could not be determined were excluded.

The recent distribution of snakehead fishes is taken from Jayaram (1999), Lee and Ng (1994), Bonou and Teugels (1985), Vierke (1978), Coad (1978), Berg (1965) and Smith (1945).

The few Iranian and Baluchistan records of channids (Coad, 1978) are excluded from the climate analysis because these records are from intramontane basins (rivers Bampur, Halil, Dasht, Rakshan, Mashkel) for which climate data are not available. Furthermore, the precipitation in these basins depends highly on orography and varies significantly over short distances (Weischet and Endlicher, 2000).

The GIS mapping (Figure 2, and DR1) was plotted with the program ArcView. The source document for the Mean Annual Precipitation data set is Deichmann and Eklundh (1991). An online available ESRI Shape file from the Global Resource Information Database (GRID) was used. Paleolatitude informations are taken from Dercourt et al., 2000.

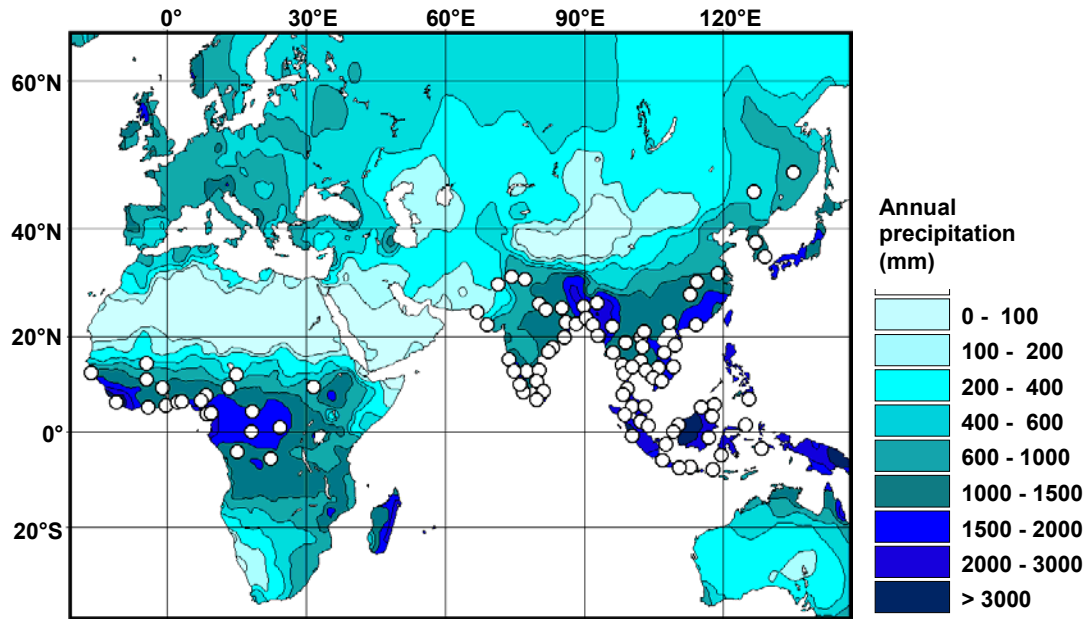


Figure DR1. Annual precipitation map of Old World (data from Deichmann and Eklundh, 1991) and extant distribution of snakeheads (*Channidae*) indicated by 96 selected climate stations (white dots; see Table DR2 for the data).

#### APPENDIX DR4: INFLUENCE OF TEMPERATURE ON THE SNAKEHEAD FISH DISTRIBUTION

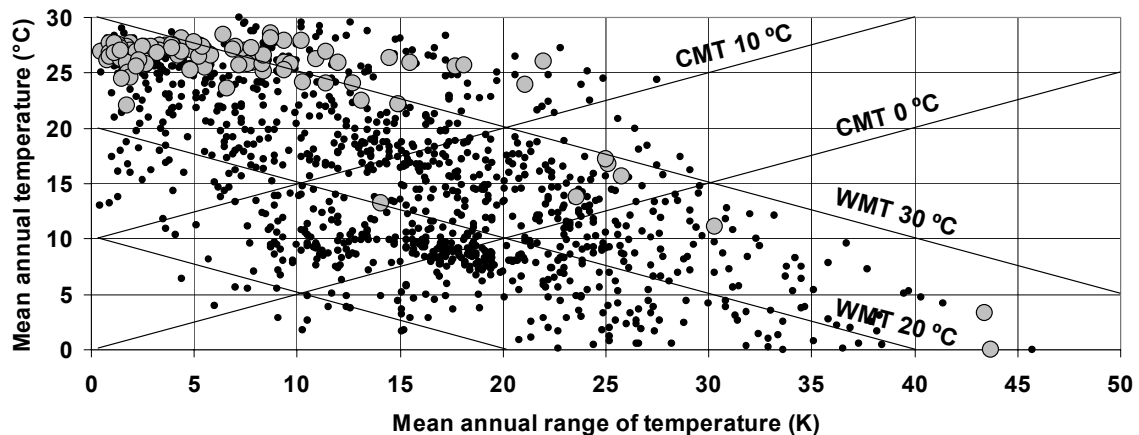


Figure DR2. Distribution of extant snakeheads in a mean annual temperature (MAT) vs. mean annual range of temperature (MART) climate space of 1266 climate stations. Climate data from M.J. Müller and D. Hennings The Global Climate Data Atlas, Climate 1 ([www.climate-one.de](http://www.climate-one.de), accessed January 2004). Small black dots—climate stations without snakeheads ( $n = 1170$ ); large gray dots—climate stations with snakeheads ( $n = 96$ ). WMT—warm-month temperature, CMT—cold-month temperature.

In order to examine the influence of temperature on the snakehead fish distribution, I plotted mean annual temperature (MAT) vs. mean annual range of temperature (MART) (Figure DR2). On the basis of the geometry of the MAT vs. MART climate space occupied by snakeheads, their distribution seems limited by warm-month temperature (WMT) rather than cold-month temperature (CMT), MAT, or MART. This correlation is reflected by the presence of at least one species in the continental, temperate regions of East Asia (Amur Basin of North China)—*Channa argus*.

Table DR1: Locality information for fossil snakeheads (Channidae)

Locality	Country	LAT	LONG	Min Age	Max Age	Environment	collection acronym	Author
Adelschlag	Germany	48.84	11.22	16.7	16.7	shallow_lake	BSP	Böhme, 2003
Altenstadt	Germany	48.16	10.11	15.3	15.3	chan_fill	BSP	Böhme, 2003
Ambach	Germany	48.65	11.1	16.5	16.5	floodplain	BSP	Böhme, 2003
Andelfingen Rebstock	Switzerland	47.6	8.6833	16	17.5	unknown		Gaudant, 2002
Anried 1	Germany	48.34	10.56	14.8	17	floodplain	BSP	Böhme, 2003
Anried 2	Germany	48.34	10.56	15.7	15.9	floodplain	BSP	this paper
Anried 3	Germany	48.34	10.56	15.7	15.9	floodplain	BSP	this paper
Anried 4	Germany	48.34	10.56	15.7	15.9	floodplain	BSP	this paper
Anried 5	Germany	48.34	10.56	15.7	15.9	floodplain	BSP	this paper
Anwil (Grabung 1980)	Switzerland	47.08	8	13.2	13.2	floodplain	NHMB	Böhme, 2003
Appertshofen	Germany	48.87	11.46	15.8	15.8	fissure	BSP	Böhme, 2003
Aresing	Germany	48.53	11.3	14.8	17	shallow_lake	BSP	Böhme, 2003
Arth (Coll. Seehuber)	Germany	48.58	12.06	16.5	16.5	floodplain	NMA	Böhme, 2003
Arth 1a	Germany	48.58	12.06	16.4	16.4	floodplain	BSP	Böhme, 2003
Arth 1b	Germany	48.58	12.06	16.4	16.4	floodplain	BSP	Böhme, 2003
Arth oben	Germany	48.58	12.06	16.5	16.5	floodplain	BSP	Böhme, 2003
Attenfeld	Germany	48.78	11.19	16	16	chan_fill	BSP	Böhme, 2003
Aumühle - Mitte	Germany	48.61	11.09	16.1	16.1	chan_fill	BSP	Böhme, 2003
Aumühle - Oben	Germany	48.61	11.09	16.2	16.2	chan_lag	BSP	Böhme, 2003
Aya cave layer 4-6	Russia	52.9	106.2	15	16.6	unknown		Filipov et al. 2000
Baiershofen	Germany	48.45	10.55	14.5	16	floodplain	BSP	Böhme, 2003
Beragua Coal mine	India	34	75	37	49	unknown		Khare, 1976
Bergheim	Germany	48.76	11.25	14.8	17	floodplain	BSP	Böhme, 2003
Bestobe 1, BES1	Kasachstan	45.95	58.825	16.8	18	unknown		this paper
Beuern	Germany	50.6333	8.8167	15	17	lake	SNFG	this paper
Bhilumar	Pakistan	32.7	72.3	12	13	unknown	BSP	this paper
Bhurivala 2	Pakistan	32.58	72.3	12	13	unknown	BSP	this paper
Binnrot (Rottal)	Germany	48.06	10.05	15	16	floodplain	SMNS, BSP	Sach, 1999
Bodmann 2 (HaHo3)	Germany	47.8	9.03	17.2	17.4	lake	BSP	Böhme, 2003
Bodmann 3 (HaHo3)	Germany	47.8	9.03	17.2	17.4	lake	BSP	this paper
Bonlanden	Germany	48.06	10.07	14.5	14.5	floodplain	SMNS	Böhme, 2003
Bugti level 4	Pakistan	29	69.1	16	18	floodplain	MUM	this paper
Burtenbach 1b	Germany	48.33	10.44	16.3	16.3	chan_lag	BSP	Böhme, 2003
Burtenbach 1c	Germany	48.33	10.44	16.3	16.3	chan_fill	BSP	Böhme, 2003
Chari Gambhir	Pakistan	32.67	72.28	12	13	unknown	BSP	this paper
Chhoinaja	Pakistan	32.68	72.31	12	13	unknown	BSP	this paper
Chhonijawala	Pakistan	32.7	72.3	12	13	unknown	BSP	this paper
Chorlakk	Pakistan	33.6	71.9333	50	55	unknown		Roe, 1991
Denkendorf Autobahnauffahrt	Germany	48.93	11.46	15.7	15.7	lake	BSP	this paper
Denkendorf Nord (Südwand)	Germany	48.93	11.46	15.7	15.7	lake	BSP	Böhme, 2003
Denkendorf Nord (Westwand)	Germany	48.93	11.46	15.7	15.7	lake	BSP	Böhme, 2003
Denkendorf Süd Ostseite	Germany	48.93	11.46	15.7	15.7	lake	BSP	this paper
Denkendorf Süd Westseite	Germany	48.93	11.46	15.7	15.7	lake	BSP	Böhme, 2003
Derching 1a	Germany	48.4	10.97	14.7	14.7	floodplain	BSP	Böhme, 2003
Derching 1b	Germany	48.4	10.97	14.9	14.9	lake	BSP	Böhme, 2003
Dieshof, unterer Mergel	Germany	48.58	11.1	16.7	16.7	floodplain	BSP	Böhme, 2003
Dinkelscherben	Germany	48.34	10.59	15	15	floodplain	BSP	Böhme, 2003
Eberstetten 2 (unter Weg)	Germany	48.53	11.53	15.3	15.3	chan_fill	BSP	Böhme, 2003
Edelbeuren Mauerkopf	Germany	48.09	10.03	14.9	14.9	floodplain	SMNS, BSP	Sach et al., 2003
Edelbeuren-Schlachtberg	Germany	48.08	10.02	14.8	14.8	floodplain	SMNS, BSP	Sach et al., 2003
Edelstetten	Germany	48.29	10.39	15	15	chan_fill	BSP	Böhme, 2003
Eitensheim	Germany	48.82	11.32	16.8	16.8	floodplain	BSP	Böhme, 2003
Entlebuch	Switzerland	46.9833	8.0667	16.5	16.7	unknown		Gaudant, 2002
Ettelried	Germany	48.33	10.55	14.8	17	chan_fill	BSP	this paper
Forsthart	Germany	48.63	13.03	17.2	17.2	floodplain	BSP	Böhme, 2003
Gallenbach 2a	Germany	48.41	11.1	14.8	14.8	floodplain	BSP	Böhme, 2003
Gallenbach 2b	Germany	48.41	11.1	14.8	14.8	floodplain	BSP	Böhme, 2003
Gallenbach 2c	Germany	48.41	11.1	13.5	14.8	chan_lag	BSP	Böhme, 2003
Ganda Kas 1	Pakistan	33.7	72.2	37	49	unknown	BSP	this paper
Ganda Kas 2	Pakistan	33.7	72.2	37	49	unknown	BSP	this paper
Goldberg (ohne Nummer)	Germany	48.85	10.47	13.5	14.8	fissure	BSP	Böhme, 2003
Goldberg 10	Germany	48.85	10.47	13.5	14.8	fissure	NMA, BSP	Böhme, 2003
Goldern	Germany	48.59	12.34	14.8	17	chan_fill	BSP	Böhme, 2003
Griesbeckerzell 1a	Germany	48.44	11.05	14.8	14.8	chan_fill	BSP	Böhme, 2003
Griesbeckerzell 1b	Germany	48.44	11.05	15	15	chan_fill	BSP	Böhme, 2003
Günzburg 1/2	Germany	48.45	10.27	17	17	lake	BSP	this paper
Günzburg 1/3	Germany	48.45	10.27	17	17	floodplain	BSP	Böhme, 2003
Günzburg 2/1	Germany	48.45	10.27	17	17	chan_fill	BSP	Böhme, 2003
Günzburg 2/2	Germany	48.45	10.27	17	17	chan_fill	BSP	Böhme, 2003
Günzburg 2/3	Germany	48.45	10.27	17	17	chan_fill	BSP	Böhme, 2003
Günzburg 2/4	Germany	48.45	10.27	17	17	chan_fill	BSP	Böhme, 2003
Günzburg 2/5	Germany	48.45	10.27	17	17	chan_fill	BSP	Böhme, 2003

Table DR1 (cont.): Locality information for fossil snakeheads (Channidae)

Locality	Country	LAT	LONG	Min Age	Max Age	Environment	collection acronym	Author
Günzburg 2/6	Germany	48.45	10.27	17	17	chan_fill	BSP	Böhme, 2003
Göttschlag 1b	Germany	48.43	11.61	14.6	14.6	chan_fill	BSP	Böhme, 2003
Had Pu Dai (= Nah Nai Yod)	Thailand	18	99.2	15	16	unknown	MUM	this paper
Hahnenberg	Germany	48.81	10.6	13.5	14.8	lake	BSP	this paper
Hambach 6C	Germany	50.9	6.45	15	15.5	swamp	IPB	Böhme, 2003
Hermaringen 1	Germany	48.59	10.26	17	18	fissure	BSP	Böhme, 2003
Hesselohe	Germany	48.75	11.18	16.8	16.8	floodplain	BSP	Böhme, 2003
Hitzhofen 1	Germany	48.84	11.32	16.5	16.5	floodplain	BSP	Böhme, 2003
Hitzhofen 1+2	Germany	48.84	11.32	16.5	16.5	floodplain	BSP	Böhme, 2003
Hitzhofen 2	Germany	48.84	11.32	16.5	16.5	floodplain	BSP	Böhme, 2003
Hohenraunau b. Krumbach	Germany	48.21	10.36	14.7	14.8	chan_fill	BSP	this paper
Hürth 1 (S Treuchtlingen)	Germany	48.92	10.91	14.8	17	fissure	BSP	Böhme, 2003
Häder	Germany	48.35	10.63	15.9	16.1	chan_fill	BSP	Böhme, 2003
Illerkirchberg Fp.18 (Ho 8)	Germany	48.31	10.04	16.7	17	lake	BSP	Reichenb., 1988; Böhme 2003
Illertissen (= Betlingshausen)	Germany	48.24	10.11	16.1	16.1	chan_fill	BSP	Böhme, 2003
Imenberg	Switzerland	0	0	13	13.3	floodplain	NHMB	Gaudant, 2002; Böhme, 2003
Ivancice	Czech Republic	49.1	16.3833	16.7	17	unknown	SNMB	Brzbohaty, 1969
Kanatta Chak	Pakistan	32.7	73.3667	12	13	unknown	BSP	this paper
Kanatti Chak 4	Pakistan	32.7	72.1	12	13	unknown	BSP	this paper
Kanatti Chak 7	Pakistan	32.7	72.1	12	13	unknown	BSP	this paper
Kirrborg – Sandgrube	Germany	48.22	10.5	13.5	14.8	chan_fill	NMA	Böhme, 2003
Kirrborg – Tongrube	Germany	48.22	10.5	13.5	14.8	floodplain	NMA	Böhme, 2003
Kleineisenbach	Germany	48.36	11.59	13	13.2	floodplain	BSP	Böhme, 2003
La Romieu (LR II)	France	44.2	0.9	17.2	17.2	unknown	MNL	Böhme, 2003
Ladhanyi, Haritalyangan	India	31.5333	76.667	7	8	floodplain		Sahni and Khare 1977
Laimering 1a (Lehmberg)	Germany	48.38	11.08	13	13.2	floodplain	BSP	Böhme, 2003
Laimering 3	Germany	48.38	11.08	14.6	14.6	floodplain	BSP	Böhme, 2003
Laimering 4b	Germany	48.38	11.08	14.2	14.2	floodplain	BSP	Böhme, 2003
Laimering 5	Germany	48.38	11.08	14.2	14.2	chan_lag	BSP	Böhme, 2003
Langenau 1	Germany	48.5	10.12	17.2	17.4	floodplain	BSP	Böhme, 2003
Langenau 2	Germany	48.5	10.1	17.2	17.4	unknown	BSP	Böhme, 2003
Langenmosen	Germany	48.6	11.21	16.7	16.7	chan_fill	BSP	Böhme, 2003
Le Locle	Switzerland	47.0667	6.75	13.4	13.4	lake		Gaudant, 2002
Längenbach b. Seelfingen	Germany	47.85	9.11	14.8	17	lake	BSP	this paper
Mae Long	Thailand	17.5	98.9	15.5	16.5	unknown	MUM	this paper
Maßendorf	Germany	48.59	12.44	16.3	16.3	floodplain	BSP	Böhme, 2003
Mohrenhausen	Germany	48.19	10.27	15.4	15.4	chan_fill	BSP	Böhme, 2003
Mount Shaman Arganty	Kasachstan	46.9	83.2	13	15	lake		Sytchevskaya, 1989
Muttershofen	Germany	48.28	10.52	14.5	16	unknown	NMA	Böhme, 2003
Mydlovary	Czech Republic	49.85	13.05	15	16.7	lake	CUP	this paper
Mysualmas	Kasachstan	45.9	55.25	13.2	14.2	unknown	BSP	this paper
Mörgen	Germany	48.15	10.5	11.1	13.3	chan_fill	NMA	Böhme, 2003
Nagri	Pakistan	32.7	72.6	9	11.2	unknown	BSP	this paper
NK121	Uganda	1.5	31	3	3.6	lake		van Neer, 1994
NK43	Uganda	1.5	31	4.5	7	lake		van Neer, 1994
NK48	Uganda	1.5	31	4.5	7	lake		van Neer, 1994
NK93	Uganda	1.5	31	3	3.6	lake		van Neer, 1994
Oberbernbach 1	Germany	48.47	11.12	15.7	15.7	floodplain	BSP	Böhme, 2003
Oberbernbach 2	Germany	48.47	11.12	15.7	15.7	floodplain	BSP	Böhme, 2003
Oberbernbach a	Germany	48.47	11.12	15.7	15.7	floodplain	BSP	Böhme, 2003
Oberschöneberg 2A	Germany	48.32	10.58	15.7	15.9	floodplain	BSP	this paper
Oberschöneberg 2B	Germany	48.32	10.58	15.7	15.9	floodplain	BSP	this paper
Oberschöneberg 2C	Germany	48.32	10.58	15.7	15.9	floodplain	BSP	this paper
Oberschöneberg 2D	Germany	48.32	10.58	15.7	15.9	floodplain	BSP	this paper
Oberschöneberg 2E	Germany	48.32	10.58	15.7	15.9	floodplain	BSP	this paper
Oberschöneberg 2F	Germany	48.32	10.58	15.7	15.9	floodplain	BSP	this paper
Oberschöneberg 2G	Germany	48.32	10.58	15.7	15.9	floodplain	BSP	this paper
Oberschöneberg 2J	Germany	48.32	10.58	15.7	15.9	floodplain	BSP	this paper
Offingen 1	Germany	48.48	10.36	16.7	17	lake	BSP	Böhme, 2003
Oggenhausen	Germany	48.67	10.23	15	17	floodplain	SMNS	this paper
Oggenhof b. Häder	Germany	48.35	10.76	15.7	15.7	floodplain	BSP	Böhme, 2003
Olkhon Tagai	Russia	53.1939	107.34	16.6	20	unknown	BSP	Logatchev, 1964
Ozernaja, Mount Shaman	Kasachstan	47.45	84.47	5.3	9	lake		Sytchevskaya, 1989
Paali 1	Pakistan	29	69.04	30	34	estuary	MUM	this paper
Paali C2	Pakistan	28.85	69.2	30	34	estuary	MUM	this paper
Petersbuch 7	Germany	48.97	11.19	17.5	18	fissure	BSP	Böhme, 2003
Pfaffenzell - bituminöse Lage	Germany	48.43	11.01	14.5	14.5	lake	BSP	this paper
Pfaffenzell – leg. Bassler	Germany	48.43	11.01	14.6	14.6	floodplain	BSP	this paper
Pfungstadt	Germany	49.8025	8.5983	15	17	unknown		this paper
Ramnagar	India	32.8167	72.3667	12	13	unknown		Gayet, 1988

Table DR1 (cont.): Locality information for fossil snakeheads (Channidae)

Locality	Country	LAT	LONG	Min Age	Max Age	Environment	collection acronym	Author
Rauscheröd	Germany	48.55	13.26	17.2	17.4	floodplain	BSP	Böhme, 2003
Rembach	Germany	48.6	12.9	17	17	floodplain	BSP	Böhme, 2003
Rennertshofen	Germany	48.24	10.23	14.8	17	floodplain	BSP	Böhme, 2003
Ried - Schicht 3	Germany	48.74	11.18	14.8	17	lake	BSP	this paper
Ried - Schicht 5	Germany	48.74	11.18	14.8	17	lake	BSP	this paper
Sandelzhausen (D2)	Germany	48.62	11.79	16.3	16.3	floodplain	BSP	Böhme, 1999, 2003
Sandelzhausen (E)	Germany	48.62	11.79	16.3	16.3	floodplain	BSP	Böhme, 1999, 2003
Sandelzhausen (B)	Germany	48.62	11.79	16.3	16.3	floodplain	BSP	Böhme, 1999, 2003
Sandelzhausen (C1)	Germany	48.62	11.79	16.3	16.3	floodplain	BSP	Böhme, 1999, 2003
Sandelzhausen (C2)	Germany	48.62	11.79	16.3	16.3	floodplain	BSP	Böhme, 1999, 2003
Sandelzhausen (C3/D1)	Germany	48.62	11.79	14.8	17	floodplain	BSP	Böhme, 1999, 2003
Sansan	France	43.9	-0.5	13.5	13.7	floodplain		Gaudant, 1996
Schaffhof	Germany	48.7	9.56	16	16	unknown	BSP	Böhme, 2003
Schießen	Germany	48.29	10.24	16.5	16.5	chan_fill	BSP	Böhme, 2003
Schönenberg b. Jettingen	Germany	48.36	10.4	16.5	16.5	chan_fill	BSP	Böhme, 2003
Sehwan 81/14	Pakistan	26.5	67.5	13.7	16.2	estuary	UU	this paper
Sehwan 82/27	Pakistan	26.5	67.5	13.7	16.2	estuary	UU	this paper
Sosianwali NW	Pakistan	32.68	72.32	11.2	12	unknown	BSP	this paper
Stätzing	Germany	48.4	10.9667	14.4	14.6	floodplain	BSP	Böhme, 2003
Tränkmühle SW Aichach	Germany	48.43	11.1	14.8	17	floodplain	BSP	Böhme, 2003
Tui Khola Valley, loc. N4	Nepal	29.97	82.4	9	11	floodplain	NMNH	West et al., 1991
Tui Khola Valley, loc. N8+N14	Nepal	28	82.37	12	13	floodplain	NMNH	West et al., 1991
Undorf	Germany	49.02	11.93	15.8	15.8	floodplain	BSP	Böhme, 2003
Undorf (Bahnstrecke)	Germany	49.02	11.93	15.8	15.8	floodplain	BSP	Böhme, 2003
Unlingen	Germany	48.16	9.52	14.5	16	floodplain	NMA	this paper
Unterhausen. Neuburg	Germany	48.71	11.09	16.7	16.7	floodplain	BSP	Böhme, 2003
Unterneu 1b	Germany	48.43	11.1	14.8	14.8	floodplain	BSP	Böhme, 2003
Ursberg (nördliche Sandgrube)	Germany	48.26	10.45	13.5	14.8	chan_fill	NMA	Böhme, 2003
Vymbel, Mount Shaman	Kasachstan	47.45	84.47	15	18	lake		Sytchevskaya, 1989
Walda 1 (unten)	Germany	48.61	11.09	16.3	16.3	floodplain	BSP	Böhme, 2003
Walda 2 (oben)	Germany	48.61	11.09	16.1	16.1	chan_fill	BSP	Böhme, 2003
Wannenwaldtobel 1	Germany	48.03	9.83	14.8	14.9	lake	SMNS	Sach et al., 2003
Wannenwaldtobel 2	Germany	48.03	9.83	14.8	14.8	lake	SMNS	Sach et al., 2003
Winnewala	Pakistan	33.15	72.45	8	10.1	unknown	BSP	this paper
Winzer	Germany	48.2	10.4167	13.5	14.8	unknown	NMA	this paper
Yüshe Basin, Shansi Prov.	China	36.9	112.9	3.5	5.3	lake		Liu, 1962
Zeglingen	Switzerland	47.4167	7.9	13.5	15	unknown		Gaudant, 2002
Ziemetshausen 1b	Germany	48.29	10.53	14.8	14.8	chan_fill	BSP	Böhme, 2003
Ziemetshausen 1c	Germany	48.29	10.53	15	15	chan_fill	BSP	Böhme, 2003
Ziemetshausen 1d	Germany	48.29	10.53	15	15	chan_fill	BSP	Böhme, 2003
Ziemetshausen 1e	Germany	48.29	10.53	14.6	14.6	chan_fill	BSP	Böhme, 2003
Ziemetshausen 1f	Germany	48.29	10.53	15	15	chan_lag	BSP	Böhme, 2003
<b>collection abbreviation</b>								
BSP - Bayerische Staatssammlung Paläontologie historische Geologie, München (Germany)								
CUP - Carls University, Prague (Czech Republic)								
IPB - Institut für Paläontologie, Universität Bonn (Germany)								
MUM - University of Montpellier (France)								
NHMW - Naturhistorisches Museum, Wien (Austria)								
NMA - Naturmuseum Augsburg (Germany)								
NML - Naturmuseum Leiden (Netherlands)								
NMNH - Nepal Museum of Natural History, Kathmandu (Nepal)								
SMNS - Staatliches Museum für Naturkunde Stuttgart (Germany)								
SNGF - Senckenbergische Naturforschende Gesellschaft, Frankfurt a.M. (Germany)								
SNMB - Slovak National Museum, Bratislava (Slovakia)								
UU - University Utrecht (Netherlands)								

Table DR1: Localities, coordinates, age, environment, collections and references of fossil snakehead fish remains (data from Böhme and Ilg, 2003).

Table DR2: selected climate stations within the extant distribution area of snakeheads (Channidae)

id	lat	long	altitude	name	ccode	Köppen	Troll/Paffen
20102	48.52	135.12	86	Chabarovsk (Chabarowsk)	RUS	Dwb	III,6
20157	31.58	74.33	214	Lahore	PK	BSh	IV,3
20158	30.2	71.52	126	Multan	PK	BWh	IV,5
20161	24.8	66.98	4	Karachi	PK	BWh	V,5
20164	26.47	80.35	127	Kanpur	IND	Cwa	V,3
20165	25.62	85.17	53	Patna	IND	Cwa	V,2
20166	25.28	81.73	98	Allahabad	IND	Cwa	V,3
20178	22.37	69.08	11	Dwarka	IND	BWh	V,4
20179	22.82	86.18	129	Jamshedpur	IND	Aw	V,2
20181	22.53	88.33	6	Calcutta	IND	Aw	V,2
20185	19.8	85.82	6	Puri	IND	Aw	V,2
20188	17.7	83.3	38	Vishakhapatnam	IND	Aw	V,2
20189	16.95	82.23	8	Kakinada	IND	Aw	V,3
20190	12.95	77.62	920	Bangalore (Bangalur)	IND	Aw	V,2
20191	13.07	80.25	16	Madras	IND	Aw	V,2
20193	10.77	79.85	9	Nagappattinam	IND	Aw	V,2
20194	8.48	76.95	61	Trivandrum	IND	Aw	V,2
20195	26.62	92.78	79	Tezpur	IND	Aw	V,2
20197	26.02	89.98	35	Dhubri	IND	Am	V,2
20199	15.42	73.78	62	Marmagoa (near Goa)	IND	Am	V,3
20200	12.87	74.85	22	Mangalore (Mangalur)	IND	Am	V,2
20202	9.97	76.23	3	Cochin	IND	Am	V,1
20205	8.58	81.25	7	Trincomalee	SRI	Aw	V,2
20207	6.9	79.87	7	Colombo	SRI	Af	V,1
20210	23.62	90.5	8	Narayangany (Narayanganj,near Dacca)	BD	Aw	V,2
20211	22.35	91.83	27	Chittagong	BD	Am	V,1
20214	21.98	96.1	77	Mandalay	BUR	Cwa	V,3
20215	20.13	92.92	9	Sittwe (Akyab)	BUR	Am	V,1
20216	16.77	96.18	5	Yangon (Rangun)	BUR	Am	V,1
20218	14.12	98.3	6	Tavoy	BUR	Am	V,1
20219	12.43	98.6	20	Myeik	BUR	Am	V,1
20228	45.75	126.63	143	Haerbin (Harbin)	VRC	Dwa	III,6
20244	32.07	118.78	62	Nanjing (Nanking)	VRC	Cfa	IV,7
20246	30.55	114.28	23	Wuhan (Wu-han)	VRC	Cfa	IV,7
20248	28.25	112.83	48	Changsha (Chang-sha)	VRC	Cfa	IV,7
20254	22.8	108.3	75	Nanning (Nan-ning)	VRC	Cfa	V,2
20255	18.23	109.53	2	Yulin (Hai-nan-Insel)	VRC	Aw	V,2
20256	22.3	114.17	33	Hongkong	HOK	Cwa	V,2
20261	37.57	126.97	86	Soul (Seoul)	SCO	Dwa	III,8
20262	35.1	129.03	69	Pusan (Busan)	SCO	Cwa	IV,7
20277	18.78	98.98	314	Chiang Mai (Chiangmai)	THA	Aw	V,2
20278	14.97	102.12	181	Nakhon Ratchasima	THA	Aw	V,2
20279	13.75	100.47	2	Bangkok	THA	Aw	V,2
20280	9.12	99.28	3	Surat Thani (Bandon)	THA	Aw	V,2
20281	7.97	98.4	3	Phuket	THA	Am	V,2
20282	19.88	102.13	287	Louang Prabang (Luang Prabang)	LAO	Aw	V,2
20283	17.98	102.6	162	Vientiane	LAO	Aw	V,2
20284	13.52	105.97	51	Stung Treng	KAM	Aw	V,2
20285	13.1	103.2	22	Batdambang (Battambang)	KAM	Aw	V,2
20286	11.55	104.92	10	Phnum Pénh (Phnom Penh)	KAM	Aw	V,2
20287	21.03	102.87	16	Ha-noi (Hanoi)	VN	Cwa	V,2
20288	16.73	107.18	7	Guang Tri	VN	Am	V,1
20289	13.75	109.22	6	Qui-nhon (Gui Nhon)	VN	Aw	V,1
20290	10.78	106.7	9	Ho Chi Minh City (Saigon)	VN	Aw	V,2
20291	5.83	118.12	46	Sandakan (Borneo)	MAL	Af	V,1
20292	5.42	100.32	5	Pinang	MAL	Af	V,1
20293	5.33	103.13	32	Kuala Trengganu	MAL	Af	V,1
20295	2.2	102.27	45	Malacca	MAL	Af	V,1

**Table DR2 (cont.): selected climate stations within the extant distribution area of snakeheads (Channidae)**

id	lat	long	altitude	name	cocode	Köppen	Troll/Paffen
20296	1.48	110.33	26	Kuching (Borneo)	MAL	Af	V,1
20297	5.28	115.27	18	Pulau Labuan (Labuan)	MAL	Af	V,1
20298	1.3	103.83	10	Singapore	SGP	Af	V,1
20299	3.32	117.6	12	Tarakan (Borneo)	RI	Af	V,1
20301	3.58	98.68	23	Medan (Sumatra)	RI	Af	V,1
20302	1.5	124.83	2	Manado (Célébes)	RI	Af	V,1
20303	-0.02	109.33	3	Pontianak (Borneo)	RI	Af	V,1
20304	-0.93	100.37	7	Padang (Sumatra)	RI	Af	V,1
20305	-1.28	116.85	7	Balikpapan (Borneo)	RI	Af	V,1
20306	-2.75	107.65	3	Tandjungpandan (Belitung)	RI	Af	V,1
20307	-3.7	128.17	4	Ambon (Maluku, Molukken)	RI	Af	V,1
20308	-5.13	119.47	2	Makasar (Célébes)	RI	Am	V,2
20309	-6.18	106.83	8	Djakarta (Java)	RI	Am	V,1
20310	-7.63	112.92	5	Surabaya (Java)	RI	Aw	V,2
20311	-7.75	110.6	150	Surakarta (Java)	RI	Am	V,1
20312	-8.2	117.83	500	Tombora (Sumbawa)	RI	Af	V,1
20320	7.07	125.6	20	Davao (Mindanao)	PHI	Af	V,1
30033	14.5	-4.2	280	Mopti	MLI	BSh	V,3
30040	12.13	15.03	295	Ndjamena	TCH	BSh	V,4
30048	9.55	31.65	385	Malakal	SUD	Aw	V,3
30062	12.58	-16.27	10	Ziguinchor	SN	Aw	V,3
30066	6.3	-10.75	25	Monrovia	LIB	Am	V,1
30068	5.25	-3.93	7	Abidjan	CI	Am	V,1
30070	11.17	-4.25	435	Bobo Dioulasso	BF	Aw	V,3
30071	9.42	-0.88	201	Tamale	GH	Aw	V,2
30072	5.6	-0.2	65	Accra	GH	Aw	V,2
30074	6.35	2.43	10	Cotonou	DY	Aw	V,2
30079	7.7	8.58	111	Makurdi	NIA	Aw	V,2
30080	6.63	7.55	140	Enugu	NIA	Aw	V,2
30081	6.45	3.4	3	Lagos	NIA	Aw	V,2
30082	3.77	8.77	12	Santa Isabel (Fernando Poo)	EGU	Am	V,1
30083	9.33	13.38	249	Garoua	KAM	Aw	V,3
30085	4.02	9.72	11	Douala	KAM	Am	V,1
30089	4.37	18.57	385	Bangui	RCA	Aw	V,1
30093	0.82	24.48	487	Yangambi	ZRE	Af	V,1
30094	0.05	18.3	340	Eala	ZRE	Af	V,1
30096	-4.33	15.27	358	Kinshasa (Léopoldville)	ZRE	Aw	V,2
30097	-5.88	22.42	660	Kananga (Luluabourg)	ZRE	Aw	V,2

Table DR2: Coordinates, altitude and climate (Köppen and Troll and Paffen system) of selected climate stations within the extant distribution area of snakehead fishes (climate data from Müller and Hennings, The Global Climate Data Atlas).

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